PA/SI Program

1-27-87 ILD 053980457

EPA 1210500002

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 1 - SITE INFORMATION AND ASSESSMENT

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
ILD	053980457

II. SITE NAME AND LOCATION

Program Support Section

01 SITE NAME (Legal, common, or descriptive name of site)	02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER
Sandoval Zinc Company	Smelter Rd & Highway 51

03 CITY	04 STATE	05 ZIP CODE	06 COUNTY	07 COUNTY CODE	08 CONG DIST
Sandoval	IL	62882	Marion	121	22

09 COORDINATES LATITUDE	LONGITUDE	
38 36 43.0	089 06 28.0	Centralia East, IL (229D)

10 DIRECTIONS TO SITE (Starting from nearest public road)

III. RESPONSIBLE PARTIES

01 OWNER (If known)	02 STREET (Business, mailing, residential)
Sandoval Zinc Company	3649 South Albany Avenue

03 CITY	04 STATE	05 ZIP CODE	06 TELEPHONE NUMBER
Chicago	IL	60632	(312) 376-1900

07 OPERATOR (If known and different from owner)	08 STREET (Business, mailing, residential)

09 CITY	10 STATE	11 ZIP CODE	12 TELEPHONE NUMBER
			( )

13 TYPE OF OWNERSHIP (Check one)
☐ A. PRIVATE ☐ B. FEDERAL: _____ (Agency name) ☐ C. STATE ☐ D. COUNTY ☐ E. MUNICIPAL
☒ F. OTHER: Corporation (Specify) ☐ G. UNKNOWN

14 OWNER/OPERATOR NOTIFICATION ON FILE (Check all that apply)
☐ A. RCRA 3001 DATE RECEIVED: ___/___/___ (MONTH DAY YEAR) ☐ B. UNCONTROLLED WASTE SITE (CERCLA 103 c) DATE RECEIVED: ___/___/___ (MONTH DAY YEAR) ☒ C. NONE

IV. CHARACTERIZATION OF POTENTIAL HAZARD

01 ON SITE INSPECTION
☒ YES DATE 03/29/71 (MONTH DAY YEAR)
☐ NO 07/25/86

BY (Check all that apply)
☒ A. EPA ☐ B. EPA CONTRACTOR ☒ C. STATE ☐ D. OTHER CONTRACTOR
☐ E. LOCAL HEALTH OFFICIAL ☐ F. OTHER: _____ (Specify)
CONTRACTOR NAME(S): _____

02 SITE STATUS (Check one)
☐ A. ACTIVE ☒ B. INACTIVE ☐ C. UNKNOWN

03 YEARS OF OPERATION
1885 (BEGINNING YEAR) | 1986 (ENDING YEAR) ☐ UNKNOWN

04 DESCRIPTION OF SUBSTANCES POSSIBLY PRESENT, KNOWN, OR ALLEGED
Inorganic chemical (Toxic, Soluble)
Heavy metals (Toxic, Soluble)
Sludge (Toxic)

05 DESCRIPTION OF POTENTIAL HAZARD TO ENVIRONMENT AND/OR POPULATION
Groundwater (Environment)
Surface water (Environment)

V. PRIORITY ASSESSMENT

01 PRIORITY FOR INSPECTION (Check one. If high or medium is checked, complete Part 2 - Waste Information and Part 3 - Description of Hazardous Conditions and Incidents)
☒ A. HIGH (Inspection required promptly) ☐ B. MEDIUM (Inspection required) ☐ C. LOW (Inspect on time available basis) ☐ D. NONE (No further action needed, complete current disposition form)

VI. INFORMATION AVAILABLE FROM

01 CONTACT	02 OF (Agency/Organization)	03 TELEPHONE NUMBER
Gregory W. Dunn	IEPA	(217) 782-6761

04 PERSON RESPONSIBLE FOR ASSESSMENT	05 AGENCY	06 ORGANIZATION	07 TELEPHONE NUMBER	08 DATE
Gregory W. Dunn	IEPA	RPMS	(217) 782-6761	12/04/86 (MONTH DAY YEAR)

EPA FORM 2070-12 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 2 - WASTE INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
ILD	053980454

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES (Check all that apply)

- X A SOLID
- X B POWDER, FINES
- X C SLUDGE
- X E SLURRY
- F LIQUID
- G GAS
- D OTHER (Specify)

02 WASTE QUANTITY AT SITE (Measures of waste quantities must be independent)

- TONS: 0
- CUBIC YARDS: UNKNOWN
- NO OF DRUMS: UNKNOWN

03 WASTE CHARACTERISTICS (Check all that apply)

- X A TOXIC
- B CORROSIVE
- C RADIOACTIVE
- D PERSISTENT
- X E SOLUBLE
- F INFECTIOUS
- G FLAMMABLE
- H IGNITABLE
- I HIGHLY VOLATILE
- J EXPLOSIVE
- K REACTIVE
- L INCOMPATIBLE
- M NOT APPLICABLE

III. WASTE TYPE

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS
SLU	SLUDGE	UNKNOWN	UNKNOWN	Zinc content sludge from scrubber
OLW	OILY WASTE			
SOL	SOLVENTS			
PSD	PESTICIDES			
CCC	OTHER ORGANIC CHEMICALS			
IOC	INORGANIC CHEMICALS	UNKNOWN	CY	
ACD	ACIDS			
BAS	BASES			
MES	HEAVY METALS	UNKNOWN	CY	

IV. HAZARDOUS SUBSTANCES (See Appendix for most frequently cited CAS Numbers)

01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION

V. FEEDSTOCKS (See Appendix for CAS Numbers)

CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER
FDS	Antimony	7440-36-0	FDS		
FDS	Cadmium	7440-43-9	FDS		
FDS	Chromium	7440-47-3	FDS		
FDS	Nickel	7440-02-0	FDS		

VI. SOURCES OF INFORMATION (Cite specific references e.g., state files, sample analysis, reports)

Illinois EPA Land Files
Illinois EPA Air File
Comprehensive Groundwater Report #7 (1981; ISWS; ISGS)
Comprehensive Groundwater Report #9 (1982; ISWS; ISGS)

EPA FORM 2070-12 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
ILD	053 980454

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 [X] A. GROUNDWATER CONTAMINATION — 02 [ ] OBSERVED (DATE ____) — [X] POTENTIAL — [ ] ALLEGED
03 POPULATION POTENTIALLY AFFECTED: ± 200
04 NARRATIVE DESCRIPTION
Contamination could occur through a permeable 1 to 2 foot thick silty sandy zone. Infiltration can reach this permeable zone and migrate. Migration (if it would occur) would be very slow.

01 [X] B. SURFACE WATER CONTAMINATION — 02 [X] OBSERVED (DATE: 1982) — [ ] POTENTIAL — [ ] ALLEGED
03 POPULATION POTENTIALLY AFFECTED: N/A
04 NARRATIVE DESCRIPTION
Surface water run-off was noted draining into the stream beds southwest & southeast of the plant. An accumulation of the metals-rich cinders sediment was found in the stream bed.

01 [X] C. CONTAMINATION OF AIR — 02 [ ] OBSERVED (DATE ____) — [X] POTENTIAL — [ ] ALLEGED
03 POPULATION POTENTIALLY AFFECTED: Unknown
04 NARRATIVE DESCRIPTION
Prior to regulations on control of stacks, site could have released heavy metals into the air.

01 [ ] D. FIRE/EXPLOSIVE CONDITIONS — 02 [ ] OBSERVED (DATE ____) — [ ] POTENTIAL — [ ] ALLEGED
03 POPULATION POTENTIALLY AFFECTED: ____
04 NARRATIVE DESCRIPTION

01 [ ] E. DIRECT CONTACT — 02 [ ] OBSERVED (DATE: ____) — [ ] POTENTIAL — [ ] ALLEGED
03 POPULATION POTENTIALLY AFFECTED: ____
04 NARRATIVE DESCRIPTION

01 [X] F. CONTAMINATION OF SOIL — 02 [X] OBSERVED (DATE: 1982) — [ ] POTENTIAL — [ ] ALLEGED
03 AREA POTENTIALLY AFFECTED: Unknown (Acres)
04 NARRATIVE DESCRIPTION
Heavy metals-rich cinders and ashes were used as fill material around the plant. At this time there is a 1 to 10 foot-thick layer of metals-rich cinders that covers about 12 acres of the plant. A scrubber wastewater pit is another source of contamination due to the large quantities of Zinc leaching into the soil.

01 [X] G. DRINKING WATER CONTAMINATION — 02 [ ] OBSERVED (DATE ____) — [X] POTENTIAL — [ ] ALLEGED
03 POPULATION POTENTIALLY AFFECTED: ± 200
04 NARRATIVE DESCRIPTION
The only possible aquifer in the area is a 1 to 2 ~~foot~~ thick silty sandy zone that is permeable. It would require two or more large-diameter bored wells to supply water.

01 [ ] H. WORKER EXPOSURE/INJURY — 02 [ ] OBSERVED (DATE ____) — [ ] POTENTIAL — [ ] ALLEGED
03 WORKERS POTENTIALLY AFFECTED: ____
04 NARRATIVE DESCRIPTION

01 [ ] I. POPULATION EXPOSURE/INJURY — 02 [ ] OBSERVED (DATE: ____) — [ ] POTENTIAL — [ ] ALLEGED
03 POPULATION POTENTIALLY AFFECTED: ____
04 NARRATIVE DESCRIPTION

EPA

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
ILD	053980454

II. HAZARDOUS CONDITIONS AND INCIDENTS (Continued)

01 [X] J. DAMAGE TO FLORA — 02 [X] OBSERVED (DATE: 1984) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION
Damage to flora has occurred by surface water run-off and by emissions from the plants smokestacks.

01 ☐ K. DAMAGE TO FAUNA — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION (Include name(s) of species)

01 ☐ L. CONTAMINATION OF FOOD CHAIN — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

01 [X] M. UNSTABLE CONTAINMENT OF WASTES (Spills, runoff, standing liquids, leaking drums) — 02 [X] OBSERVED (DATE: 1982) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: UNKNOWN
04 NARRATIVE DESCRIPTION
Zinc oxide and coal ashes were left outside to be rained upon. The rain caused some of the wastes to be washed away from the plant

01 [X] N. DAMAGE TO OFFSITE PROPERTY — 02 [X] OBSERVED (DATE: 1982) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION
Damage to off-site property has been to farmlands that have been south of the plant. Run-off from the plant carries metal-rich cinders that contaminate the soil

01 ☐ O. CONTAMINATION OF SEWERS, STORM DRAINS, WWTPs — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

01 ☐ P. ILLEGAL/UNAUTHORIZED DUMPING — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL, OR ALLEGED HAZARDS

III. TOTAL POPULATION POTENTIALLY AFFECTED: ≥ 200

IV. COMMENTS

Sandoval Zinc Co. had an air permit # 121814AAB for a zinc operation. On August 12, 1986 the air permit was withdrawn per request of letter dated that day.

V. SOURCES OF INFORMATION (Cite specific references, e. g., state files, sample analysis, reports)

ILLINOIS EPA Land File
ILLINOIS EPA Air File
Cooperative Groundwater Report #7 (1981; ISWS; ISGS)
Cooperative Groundwater Report #9 (1982; ISWS; ISGS)

Executive Summary

The Sandoval Zinc Company is located east of Sandoval on Smelter Road, in the SE 1/4 of the NE 1/4, Section 17, Township 2 North, Range 1 East, Marion County, Illinois. The facility initially processed zinc ore beginning in 1885 and was converted to a secondary zinc smelter about 1915. The facility is owned by the Sandoval Zinc Company, whose office is in Chicago, Illinois. The plant was closed in 1985.

The smelter, to comply with air pollution control regulations, installed a scrubber on their plant stack in 1970. Wastewater, created from the scrubber, was disposed of in a seepage pit constructed on the cinder materials that form the present-day land surface. The facility obtained permits from the Illinois Division of Air Pollution Control to operate a Ballmill, Dryer, Rodmill, Baghouse, Mikropol Baghouse and a zinc operation. These permits were withdrawn, per the request of the company, on August 14, 1986.

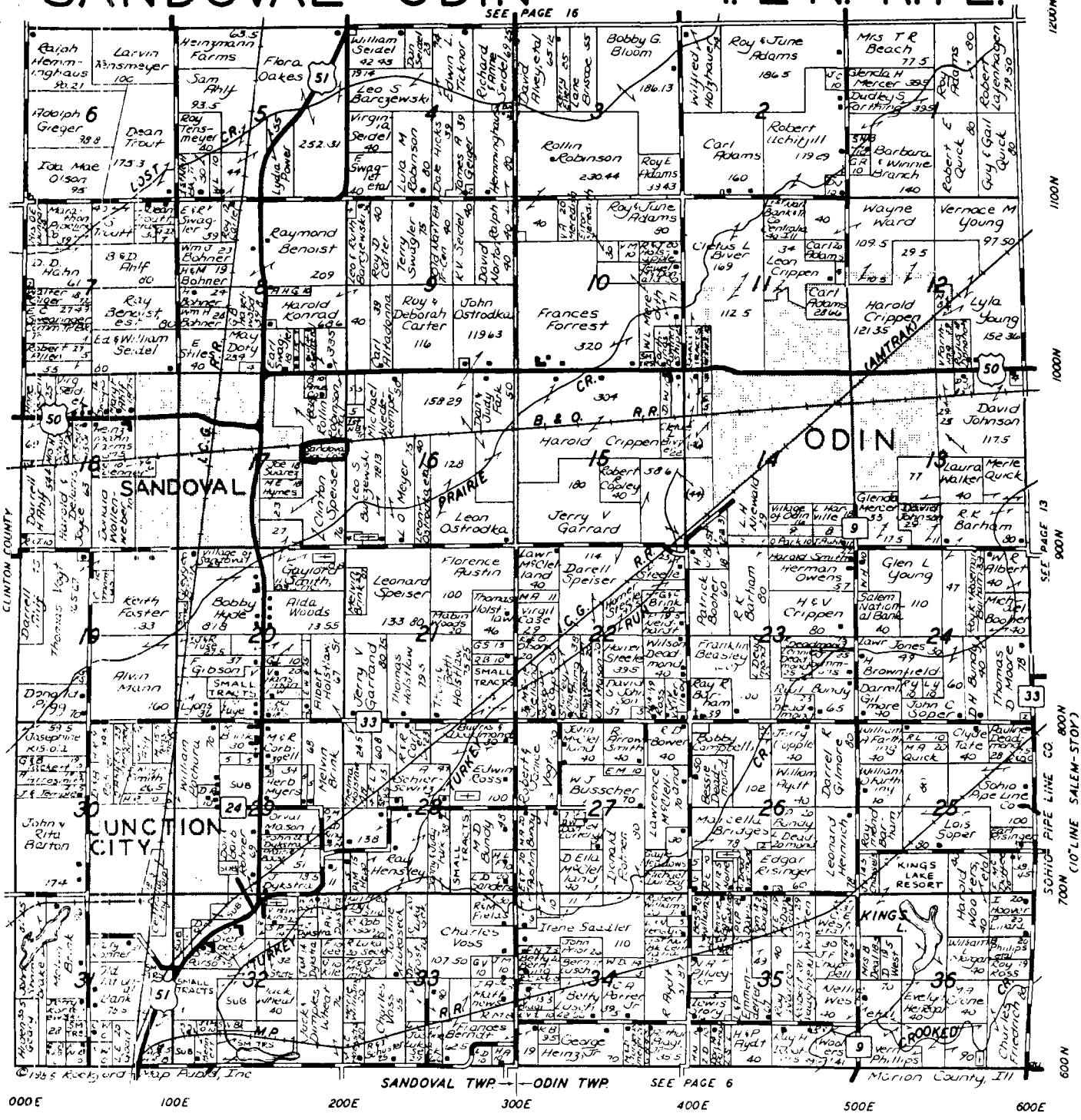
The smelter, prior to 1970, emitted ashes from their plant stack onto the plant site and nearby farmlands. (These ashes were rich in zinc and heavy metals.) The emissions from the stack and the disposal of metal-laden cinders, on the plants' 12 (twelve) acre tract, has created a 1 to 10 foot-thick layer of waste. Also, the wastewater seepage pit was cleaned frequently to reprocess the zinc content sludge for zinc recovery. Several hundred tons of the sludge would accumulate before the zinc recovery process. Besides these wastes, zinc skimmings that were fed to the kilns contained mostly pure zinc, some zinc oxide, zinc chloride, possibly ammonium chloride and other trace metals. These skimmings were fed to a kiln fired by an oil burner burning 33 gallons of Number 6 oil per hour.

The soil underneath the plant and surrounding the plant contains 100 to 100,000 ppm (parts per million) of zinc. This contamination has occurred mostly horizontal, to 28 feet, with very little contamination occurring laterally. Surface water run-off from the plant property drains into streambeds on the southwest and southeast sides of the site. Accumulations of metal laden ciders in the sediments of these streambeds have been observed due to the run-off. The presence of a 1 to 2 foot thick silty sandy zone is the only permeable zone in the area. This zone is too thin to be an adequate water supply for a house. But, groundwater movement can be laterally through this zone. The movement will be slow, nonetheless, there can be lateral movement.

Samples taken from the wastewater pit and wastes piles revealed higher than normal levels of Copper, Lead, Antimony, Cadmium, Chromium, Nickel and Zinc. These results along with findings on soil and surface water contamination warrants a high priority. At this time, a remedial investigation is commencing by Envirodyne Engineers, Inc. The purpose of the investigtion will be to characterize the nature and extent of contamination at or near the site. The results of groundwater, soil, surface water and sediment samples will determine the extent of contaminants.

GD:bls/0997g,29

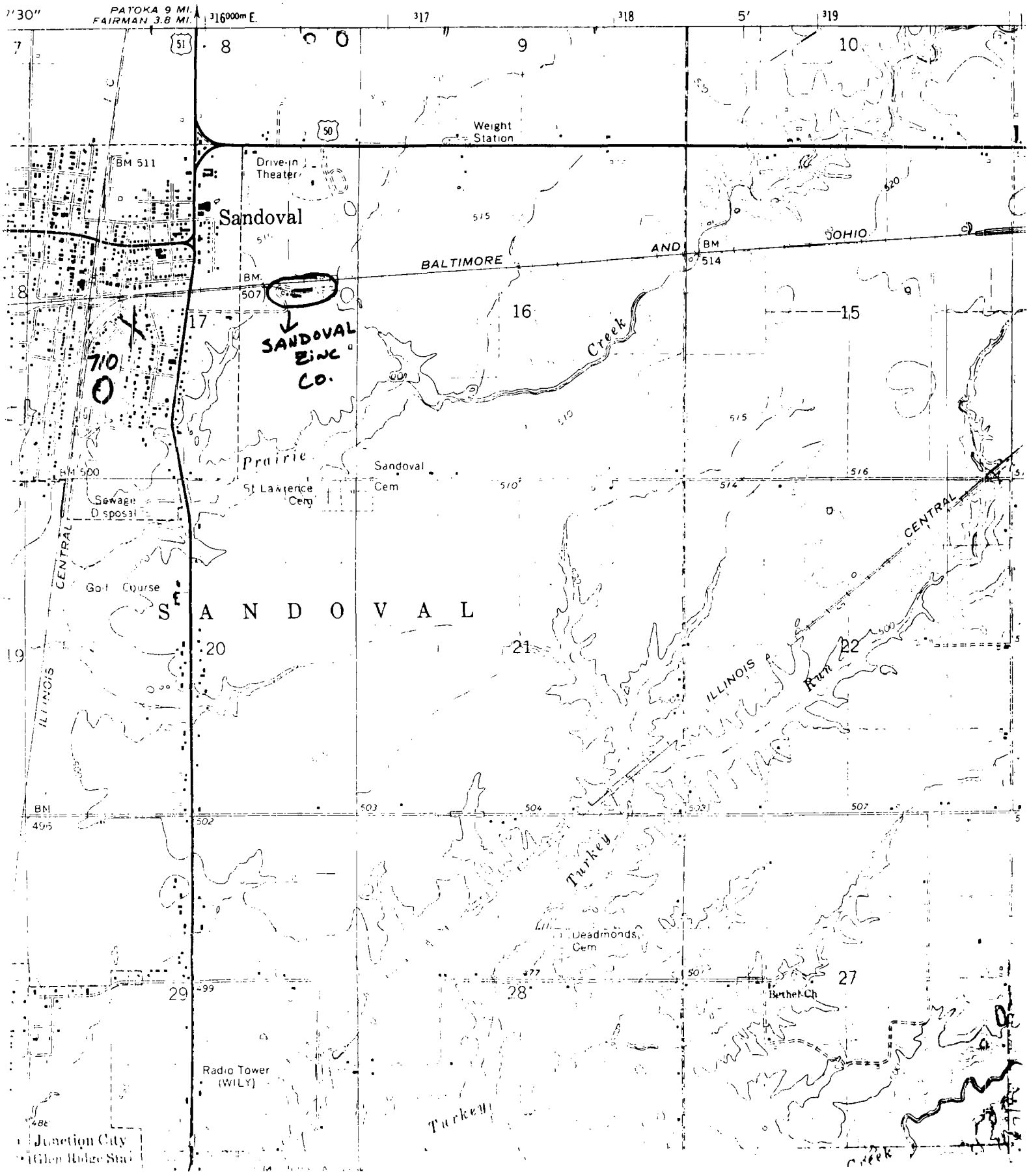
SANDOVAL – ODIN T. 2 N. – R. 1 E.



Before you dig call: (513) 898-3936 Sohio Pipe Line Co. (See Page 19)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

ST
DEPARTMENT OF
GEOLO



)IS ENVIRONMENTAL PROTECTION AGENCY
,ion of Air Pollution Control--Field Operations Section

MEMORANDUM

November 1, 1985

Date of Inspection: October 28, 1985 In - 1045 Out - 1120

Walter Franke

I.D.#: 121814AAB

RECEIVED

.OM: John Justice

Region: 3 District: 03

NOV 19 1985

IEPA - DAPC - SPFLD

SUBJECT: Facility: Sandoval Zinc

Address: Smelter Road, Sandoval, Il. 62882

Contact/Title: Mr. Leo Crow, Plant Manager Phone: 618/247-3859

As the result of a request by the above company I contacted Mr. Crow at their facility. Mr. Crow indicated that the Sandoval Zinc Company was discontinuing operations at this location effective October 31, 1985. He indicated that there were no plans to resume any of the plant operations at this location.

Mr. Crow indicated that a local businessman was considering starting a business at this location. He indicated the man to be Mr. Joe Schwartz of Sandoval. Mr. Schwartz is currently in the scrap business and was considering purchasing the plant and operating the old zinc calcining kiln and control equipment as a waste incinerator. This kiln utilizes a settling chamber, cyclone Venturi scrubber and mist eliminator as control equipment. The system has not been operated since mid-1983 due to primarily water pollution related concerns. The equipment appeared to be as Mr. Crow had indicated but it also appeared to need a substantial amount of maintenance and modification work. I indicated to Mr. Crow that the Agency would require a stack test on the incinerator. It appeared that such an undertaking would require a large financial commitment. Mr. Crow felt that this proposed program would be the combined efforts of a number of people and communities.

Mr. Crow said that the last shipment of product from Sandoval Zinc company was being shipped this day.

I indicated to Mr. Crow that any consideration to utilize the existing kiln as a waste incinerator should be proceeded by a construction permit application to the Agency. I also indicated that contact should be made with DLPC and DWPC before any commitments are finalized.

JJ:bt/0047A

cc: Region III-Marion

M E M O R A N D U M

DATE: August 21, 1986

TO: [redacted]

FROM: [redacted] DLPC - Collinsville

SUBJECT: [redacted] - Marion County - Sandoval/Sandoval Zinc Company - EMF

The purpose of this memo is to request that this abandoned facility be assigned to a RPMS project manager.

On July 25, 1986, I visited the subject facility. Brent Harris of this office and Jeff Benbenek, DAPC accompanied me. The visit was scheduled as a result of the conditions observed at a similar facility. Also I received a request from Mr. Bob Schleuger, Regional Coordinator for this office, to observe the surrounding areas. His concern stemmed from a call received from the DWPC Permit Section as a result of IDOT concerns. IDOT plans to widen Illinois Route 51. The facility in question is within 500 yards of existing Illinois Route 51.

Sandoval Zinc Company was a zinc smelter. The facility has been abandoned. During the site visit, no individuals were interviewed or observed. [redacted] the buildings have been left open and others are locked, (some of which [redacted] welded shut). Several thousand rusty drums (presumably empty) and acres of associated zinc smelting wastes were observed. Run-off from the facility's property is very significant. The fields to the north and south of the facility exhibit very little vegetation. To the east of the facility is a creek. Approximately 75-100 yards southeast of the facility's property, grey material (similar to that on the property) was observed in the creek bed. The creek was dry at this location, during this inspection.

Eight samples were taken and several photographs. (See attached) Only two of the sample results have been received. One of the samples (X201) was taken from a waste pile on-site, the other sample (X103) was taken south of the facility in the barren field. Priority Pollutant Metals analyses were requested as a result of the facility being abandoned. Per discussions with DAPC field personnel, the facility was abandoned in early 1986. It should also be noted that the Illinois State Water Survey (ISWS) did a study of the surface and groundwater at and around this facility in the mid to late 1970's. (A copy of this report has not been obtained.) At least six of the groundwater monitoring wells are still in place.

Based on the two sample results received, the visual impact of the site, the size of the site (approximately 15 acres), and the interest shown by IDOT currently, and the ISWS in the past, I request this facility be assigned to a RPMS project manager. It should also be noted that 2 copies of an aerial photograph were obtained from IDOT and clearly shows the run-off problem from the facility. (See attached letter from IDOT.)

MDG:jlr/0173L

cc: LPC - Division File
cc: DLPC - Collinsville
cc: DWPC - Collinsville
cc: Glenn Savage
cc: Tammy Ayers

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

MEMORANDUM

DATE: February 24, 1982

I.D. 121 814 AAB

TO: Walter Franke

FROM: Leonard Hopkins

SUBJECT

RECEIVED
MAR 01 1982
IEPA - DAPC - SPFLD

Facility Name: Sandoval Zinc

Location Address: Sandoval, IL

Mailing Address:

Person Contacted & Title: Leo Crow, Plant Super.

Owner/Operator:

Date & Basis of Investigation: February 19, 1982

__X__ Potential 100 T/Y _____ TAS Update _____ Other (Explain)

Emissions (List source & calculations, actual & allowable, lb/hr., T/Y):

See TAS.

Disposition: __X__ Form 177 _____ TAS Update _____ Warning Letter

_____ Thank You Letter __X__ No violations observed _____ T.B.T.

Comments:

Zinc oxide kiln and other zinc sizing and crushing operations were operating. The kiln was being controlled by the scrubber, but no pressure drop indicator is present. The stack showed a rather large amount of carryover, but the hazy day made observations difficult. A follow-up inspection will be forthcoming within the next couple of months to check the efficiency of the scrubber. All other operations looked good.

LFH:pbo

cc: DAPC Central File
cc: Region III

IL 532-0298
APC 322 6/80

Marion

July 6, 1976

Dale Montgomery - Manager, FOS

Ken Mensing - Southern Region

Investigation of Sandoval Zinc Company and Circle Smelting Company

On June 30, 1976 I investigated both of the above companies to determine what materials they were disposing on their property. A federal EPA report, EMSL-LV Project RSD 7517, included these two sites and classified them as hazardous waste sites.

I first visited Sandoval Zinc Co. and met with Plant Manager Lee Frenmel. The conditions gleaned through inspection and discussion with Mr. Frenmel revealed the following: the company has been in operation for about a hundred years and a coal mine used to be adjacent to the site to provide coal for the smelting process. Hence, the entire immediate area has ashes spread over it. Some of the incoming zinc oxide is stored outside and thus rained upon. The only waste that is discharged onto the ground is the scrubber wash water which is lagooned. However, this is allowed to dry and the remaining zinc dust is periodically collected and sold to fertilizer manufacturers for trace metal purposes. Numerous monitoring wells have been placed around the company grounds by the state water survey under a grant from the federal EPA. There is a pond to the east of the plant and a drainage ditch to the west. The sources of possible ground water pollution would be from leaching of the coal ashes and the zinc oxide stored outside and the scrubber water which is lagooned.

At the Circle Smelting Company in Beckemeyer, I spoke with Al Mensing, Plant Manager. The inspection and discussions with Mr. Mensing revealed that no waste material is disposed on the company grounds. Some raw product zinc oxide is stored outside and some zinc powder is present on the ground around the buildings. These two conditions would be the only possible sources of ground water pollution. The zinc dust collected in the bag house is all sold to fertilizer manufacturers. Numerous state water survey monitoring wells also encircle this plant.

J.R.
KM

On July 2, 1976, I spoke with Jim Gibbs of the state water survey. He is now responsible for the monitoring project at these two areas. He stated that the federal EPA contract expires January, 1977 and that they will be removing most of the wells around November, 1976. He also said they would probably leave a few wells to monitor irregularly on their own. At the present, the wells are being sampled and the results analyzed monthly. Mr. Gibbs said they are testing mainly for Zn, Pb, Cu, and Cd. In regards to Sandoval Zinc Company he said that some heavy metal parameters are being carried down to about fifteen feet, but that the concentrations are minimal. In regards to Circle Smelting Company, he said the contaminants have only leached down three to five feet and that most of the wells show no degradation. Only one well in the northwest corner is showing any increased zinc concentrations. He said generally very little ground water contamination is occurring at either site.

MM:pa/M11-12

cc: Southern Region
Rauf Piskin
Mark Taylor

SANDOVAL ZINC CO.

Binder –

2 feet by 1½

Remote Sensing / Hazardous Wastes

JUNE 20 – 22 1975

Overhead Monitoring Report

Prepared for USEPA

Region 5

EMSL – Support Laboratory

MEMORANDUM

DATE: May 11, 1976

TO: Miles Zamco, Manager, Field Operations Section - DAPC

FROM: John B. Justice - Region V

DATE OF VISIT: May 7, 1976 (2:45P - 3:30P)

SUBJECT: MARION COUNTY -- Sandoval; Sandoval Zinc Co.
I.D. #121 814 AAB

On May 7, 1976, I visited the Sandoval Zinc Co. in Sandoval, Illinois. This visit was brought about by a phone call from the Region V office indicating that a Mr. George Tinkham, previously employed by the agency and currently with the Attorney General's office, had observed an excess of particulate emissions resulting from the operation at the facility.

Upon arrival at the facility, I contacted the facility manager, Mr. Lee Frimel. I indicated to Mr. Frimel that I had been contacted regarding the matter of excess particulate emissions resulting from the operation of their facility on this particular day. Mr. Frimel indicated that Mr. Tinkham had stopped at their facility and indicated concern to him about the operation of their kiln.

I then questioned Mr. Frimel as to the reason why such a problem existed. Mr. Frimel indicated that they were currently experimenting with the material feed, air feed and operating temperature of their kiln. He indicated that this was being done due to the fact that their customers were requiring a low lead content in their product. Mr. Frimel stated that they were trying to reduce the lead content of the product by adjusting the operational properties in their kiln. He indicated that, possibly, the reason for the excess particulate emission rate was due to the fact that there was some blockage in the control equipment. He stated that if the operation of the kiln was to be changed, a new operating permit would be applied for in the near future.

At the time of my visit, the kiln was not firing. Mr. Frimel indicated that they were cooling the kiln and material down and, upon cooling, they would inspect the control equipment for any blockage noted. He stated that operations at the facility would not resume until approximately May 12 or 13, 1976 -- at which time he would be more than happy to have me observe the operation of their process. He stated that the only reason the kiln was not shut down sooner during the noted excess particulate emission condition was the fact that the wind was not blowing toward the city of Sandoval and, hopefully, not affecting persons living in the area. He indicated that this was not the normal operation for the kiln and upon completion of the necessary experimental test runs, such type of operations would not persist.

I indicated to Mr. Frimel that I would attempt to return on the days of operation, as indicated previously, to observe any deficiencies in the control equipment on their kiln.

John B. Justice

John B. Justice
Environmental Protection Engineer
Field Operations Section - Region V
DAPC

JBJ:vf
5/18/76

STATE OF ILLINOIS
ENVIRONMENTAL PROTECTION AGENCY

INTER-OFFICE CORRESPONDENCE

DATE: March 29, 1971

MEMO TO: Robert R. French

FROM: G. N. Reddy

SUBJECT: SANDOVAL ZINC COMPANY

The Sandoval Zinc Company in Sandoval, Illinois, was visited on March 25, 1971, and the manufacturing process investigated to check on possible violations.

The main process unit is a 50 feet long, approximately 6 feet in diameter rotary kiln, operating at approximately 2300°F to 2500°F at the firing end. Zinc skimmings from galvanizing processes containing mostly pure zinc, some zinc oxide, zinc chloride, possibly ammonium chloride and other trace metals are fed to the kiln and fired by an oil burner burning 33 gallons per hour of Number 6 oil. Approximately 2,000 pounds per hour of raw material of the above composition is fed to the kiln and 1,500 pounds per hour collected as the product. The rest 500 pounds per hour is discharged into the atmosphere. The particulate matter in the effluent, according to the analysis is supplied by the company, is appproximately 59% zinc, 2% iron, 39% zinc oxide and zinc chloride. This analysis is questionable because of the fact that at the reported kiln temperature, almost all of the pure zinc present in the feed is converted to zinc oxide and any ammonium chloride is converted to hydrochloric acid. The white fume like appearance of the effluent is characteristic of zinc oxide fumes and hydrochloric acid or salammoniac and not pure zinc.

The effluent from the stack contains particulate matter, 75% of which is less than 26 microns in size. The 50 feet settling chamber, which is in fact only about 12 feet long, does not remove any of the particulate matter. So the kiln does not essentially have a control device at present.

Mr. Albert Haas, President of the company, had testified on March 15, 1971, that his company was making only a few pounds of pure zinc slabs. The kettle furnace, settling furnace and skimmings pot are approximately producing 600 tons per year of 99.8% pure zinc. These furnaces are heated with Number 2 oil and rich zinc skimmings are used as the feed. There are no control devices on the stack connected to the hoods over the furnaces. As a result, I would suspect that substantial amounts of pure zinc vapor is being emitted from this stack.

We do not, at present have the plans and drawings of the control device the company is planning on installing on the kiln. A glance at the plans in the offices of the plant showed only two water spray chambers and duct work. Due to the absence of a venturi scrubber in the drawings, I would suspect that they will be installing only spray chambers as their control device.

Other possible pollutants emitted from the process are the products of combustion of the oil and particulate emissions from the handling and bagging operations of the product.

G. N. Reddy
Environmental Control Engineer

GNR/slm
cc: Tom McMahon
Otto Klein

RECEIVED
APR 19 1971
ENVIRONMENTAL PROTECTION AGENCY
STATE OF ILLINOIS

STATE OF ILLINOIS
ENVIRONMENTAL PROTECTION AGENCY
BUREAU OF AIR POLLUTION CONTROL
2200 CHURCHILL ROAD
SPRINGFIELD, ILLINOIS 62706

FOR INFORMATION TELEPHONE 525-7327
(AREA 217)

INSTALLATION PERMIT APPLICATION
FOR SOURCE OPERATIONS AND GAS CLEANING DEVICES

Page 3

1	a. Complete the sections indicated: ☐1 ☐2 ☐3 ☐4 ☐5 ☐6 ☐7 ☐8 ☐9 ☐10 ☐11		b. Installation Address: BOX 263, SANDOVAL, ILLINOIS	
	c. Owner Name: SANDOVAL ZINC COMPANY		d. Owner Address: 3649 S. ALBANY AVE., CHICAGO, ILL. 60632	
	e. Prepared by: Lee Frimel (Signature)		f. Prepared by: (Name and title) LEE FRIMEL, SUPT.	
2	a. EQUIPMENT DATA	b. Type of Equipment (Venturi Scrubber	c. Make and Model Squibb & Finks Tank Co.	d. Dimensions (LxWxH) On Drawings
	e. Number of units, capacity 12,000 CFM	(Cyclone & Seperator	g. Auxiliary Equipment	h. Connected to: Settling Chamber
3	a. SETTLING CHAMBER	b. Retention time (sec.)	c. Dimensions (LxWxH) 12 x 12 x 12	d. Settling Velocity (FPS)
	e. Number of units on construction One	f.	g. Length of settling path 12 ft.	h. Connected To: Cyclone
4	a. BURNER DATA	b. Type of Burner, Fuel #6 Fuel Oil	c. Make and Model Hauck	d. Rating
	e. Number of units, ignition One	f.	g. CFM Exhausted (Temperature)	h. Connected To: Rotary Drum
5	a. STACKS, VENTS AND EXHAUST OPENING	b. Type of Vent One - Pipe	c. Dimensions (LxWxH) 42" O.D. - 42 Ft. High	d. Dampers
	e. Number of vents, construction	f.	g. CFM Exhausted (Temperature) ☐o/s ☐i/s	h. Connected To: Fan
6	a. LIQUID FLOW	b. Flow (Spray, Bubbler, etc.) 200 GPM	c. Contact Area In Venturi	d. Contact Time (sec.)
	e. Composition of Solution	f.	g. Flow Rate (GPH) 12,000	h. Make Up (GPH) 600
7	a. FAN DATA	b. Type of Fan (Designate Blade) Impeller	c. Make and Model 75-4-CB Buffalo-Forge	d. Motor Data 200 H.P.
	e. Number of fans, construction One	f. 16,000 CFM	g. CFM Exhausted (Temp. @ S.P.) ☐o/s ☐i/s	h. Connected To: Seperator
8	a. CYCLONE DATA	b. Type of Cyclone ☐multiclone ☒common ☐split duct	c. Make and Model Squibb & Finks Tank Co.	d. Inlet Area 36" Dia. Sq. Ft.
	e. Number of units, construction One	f. Body Diameter 8 ft. inch / Outlet Diameter 42 inch	g. Body Height 12 ft. Inch / High Efficiency ☐Yes ☐No	h. Connected To: Settling Chamber
9	a. WASTE DATA	b. Description of waste Zinc Dust	c. Amount Collected 6000# Pounds/Day	d. Particle Size (Average) -200 Mesh Microns
	e. Types of Pollutants ☒Odor ☒Particulate ☐Aerosol ☐Gas	f.	g. Collection (specify) ☒In Bins ☐	h. Disposition of Collected Wastes ☒Scavenger ☐(specify)
10	a.	b.	c.	d.
	e.	f.	g.	h.
11	a.	b.	c.	d.
	e.	f.	g.	h.
	i.	j.	k.	l.

ILLINOIS AIR POLLUTION CONTROL BOARD

cc 80 FORM B – SOURCE OPERATION DATA

SOURCE OPERATION NUMBER _____ cc 79 = CARD IDENTIFICATION – PUNCH: 9 I.D. NO cc 1 – 6 _____

A. DESCRIBE SOURCE OPERATION AND TYPE OF PROCESS EQUIPMENT.

Feed #1 Elevator with Zinc and Salammoniac Skimmings - to grinder - elevate with #2 elevator to vibrating screen. Oversize skimmings to Ball Mill - balance to #3 elevator, then from #3 Elevator to Rotary Kiln - fumes from Rotary Kiln to Settling Chamber - through Cyclone to Venturi - to seperator - to Fan and Stack.

Card Cols. 7	8	9
8	0	0

% OF MAXIMUM CAPACITY.

OFFICE USE ONLY

CARD COLS. 10	11	12	13
BEC NUMBER			
14	15	16	17
BEC FACTOR			

B. RAW MATERIALS USED IN SOURCE OPERATION FOR NORMAL THROUGHPUT CAPACITY. NORMAL OPERATION IS

	MATERIAL	STARTING WEIGHT		MATERIAL	STARTING WEIGHT
1.	Zinc Skimmings	2500 # per hr.	5.		
2.	Salammoniac Skimmings		6.		
3.			7.		
4.			8.		

C. EMISSION: Check types of discharge that can possibly be emitted from process or equipment directly to atmosphere through stacks or ducts.

cc 18 - 1 [X] Solid, particulate matter
cc 19 - 2 [X] Steam
cc 20 - 3 [ ] Gases, vapors or fumes
cc 21 - 4 [X] Odors of any type
cc 22 - 5 [ ] Mists or Aerosols
cc 23 - 6 [ ] None

SOURCE OPERATION DISCHARGES – cc 24

1 [X] From Stack 2 [ ] At Ground Level 3 [ ] From Vents or other Opening

25	26	27	28
0	0	4	2

(FT.) STACK HEIGHT ABOVE GRADE

D. PROCESS WEIGHT RATE (lbs./hr.) cc- 29 30 31 32 33 34 35: 0 0 0 2 5 0 0

E. OPERATION TIME hrs/day cc- 36 37 38: 2 4 0

L. OPERATION IS
[X] Continuous
[ ] Batch Cycle per batch (hrs.).....

CD. COLS. 48 49 50:

CARD COLS 51 52 53 54 55 56 57: 0 0 1 2 0 0 0

COLLECTION EQUIPMENT

F. INLET GAS RATE (SCFM)

G. INLET LOADING GRAINS/SCF..... 39 40 41 42: 0 1 3 0

H. INLET LOADING lbs/1000 lbs GAS..... 58 59 60 61:

I. PRIMARY COLLECTOR: 43 44: 1 0 (See Code Below) 95.0%

J. SECONDARY COLLECTOR: 62 63: 0 8 (See Code Below)

K. (%) Card Cols. 45 46 47: 64 65 66:

M. MEASURED – ESTIMATED – EMISSIONS TO ATMOSPHERE (lbs/hr)..... 67 68 69 70 71: 0 0 0 2.5

N. ALLOWABLE EMISSIONS TO ATMOSPHERE (lbs/hr.)..... 72 73 74 75 76: 4.76

INSTRUCTIONS: (NOTE – Dotted lines indicate position of decimal point. Use additional sheets for miscellaneous comments.)

Item A. Describe your source operation and type of process equipment.
B. List all starting raw materials charged, including solid fuels. Specify lbs/hr. For batch operations specify lbs.
C. Check appropriate boxes and enter discharge information.
D. Indicate the total weight rate of all materials introduced into the source operation. Solid fuels charged will be considered as part of the process weight but liquid and gaseous fuels and combustion air will not. Include recycled material.
E. Enter normal operational hours per day for this source operation.
F. Enter rate of gas inlet to collection equipment in standard cubic feet per minute.
G&H. Enter particulate concentration of gas inlet to collection equipment in either column G or H.
I&J. List collection equipment serving the process, code as follows:

01–Absorber 02–Adsorber 03–Catalytic burner 04–Afterburner 05–Spray Chamber 06–Scrubber 07–Packed Tower 08–Venturi Scrubber 09–Settling Chamber 10–Cyclone 11–Multiclone 12–Rotoclone 13–Baghouse 14–Precipitator 15 Masking 16–Other

K. Enter estimate of collector efficiency (%).
L. Check type of operation. For batch operation, enter hours per batch cycle.
M. Enter estimate of particulates emitted to the atmosphere from this operation in lbs/hr. Circle Measured or Estimated.
N. Enter allowable emission from Table I, Chapter III of the Regulations.

Illinois Environmental Protection Agency
Contract Laboratory Service
Inorganic Analyses Data Package

Date 9/2/86

Cover Page

Lab Name AQUALAB - BT Q.C. Report No. 55-2

Site Inventory No. 1210500002 SANDOVAL ZINC
Facility Name

Region SOUTHERN Co. MARION

Sample Numbers

IEPA Monitor Point No.	Lab ID Number	IEPA Monitor Point No.	Lab ID Number
X201	28621		
X202	28622		
X101	28623		
X203	28624		
X102	28625		
X204	28626		
X205	28627		
X103	28628		

Comments: _____

ICP Interelement and background corrections applied? Yes ____ No ✓.

If yes, corrections applied before _____ or after _____ generation of raw data.

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IEPA-DLPC

Footnotes:

NR - not required by contract at this time

Chemical Analysis Form:

Value - If the result is a value greater than or equal to the instrument detection limit but less than the contract required detection limit, report the value in brackets (i.e., [10]). Indicate the analytical method used with P (for ICP/Flame AA) or F (for furnace).
U - Indicates element was analyzed for but not detected. Report with the detection limit value (e.g., 10U).
E - Indicates a value estimated or not reported due to the presence of interference. Explanatory note included on cover page.
S - Indicates value determined by Method of Standard Addition.
R - Indicates spike sample recovery is not within control limits.
* - Indicates duplicate analysis is not within control limits.
+ - Indicates the correlation coefficient for method of standard addition is less than 0.995.

CHEMICAL ANALYSIS FORM
CONTRACT LABORATORY SERVICE

x101

LAB MEASUREMENTS CONSTITUENT DESCRIPTION AND REQUIRED UNIT OF MEASURE	STORET NUMBER	REMARKS SEE INST.	REPL APP	< OR >	BT-28623 VALUE ug/g	REPORTING LEVEL DIGITS TO L or R	REPORTING LEVEL L or OF DECI
ANTIMONY	01097	U		<	14.	1	L
ARSENIC	01002	—	—	—	7.	1	L
BERYLLIUM	01012	U	—	<	1.	1	L
CADMIUM	01027	—	—	—	27.2	1	L
CHROMIUM	01034	—	—	—	39.1	1	L
COPPER	01042	—	—	—	1240.	2	L
LEAD	01051	—	—	—	2560.	2	L
MERCURY	71900	—	—	—	0.36	2	L
NICKEL	01067	—	—	—	570.	2	L
SELENIUM	01147	U	—	<	6.	1	L
SILVER	01077	—	—	—	3.1	1	L
THALLIUM	01059	U	—	<	3.	1	L
ZINC	01092	—	—	—	21100	3	L
TS %	-----	—	—	—	11.40	2	L
	-----	—	—	—		—	—
	-----	—	—	—		—	—
	-----	—	—	—		—	—
	-----	—	—	—		—	—

Footnotes: For reporting results to IEPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: Results on a dry weight Basis

Lab Manager Lillian H. Hatfield

IEPA
CONTRACT LABORATORY PROGRAM
CHEMICAL ANALYSIS FORM

SITE INVENTORY NUMBER 1 2 1 0 5 0 0 0 0 2

REGION Southern CO. Marion

FACILITY NAME Sandoval Zinc Co.

SITE BILLING CODE LP 52. 130

****

MONITOR POINT NUMBER X 1 0 2 DATE COLLECTED 0 7 1 2 5 1 8 6

TIME COLLECTED 1 3 : 5 7 MONITOR POINT SAMPLED BY GRAB USING JAR
(24 HR CLOCK) (SPECIFY METHOD)

SAMPLE FIELD FILTERED - INORGANICS (Y/N) __

COLLECTED BY Mike Grant DIVISION OR CO. DLPC

****

SAMPLE APPEARANCE: SEDIMENT SAMPLE CLOSE TO CULVERT ON NW CORNER

COLLECTOR COMMENTS: _____

TEST REQUESTED: PRIORITY POLLUTANT METALS

TURN AROUND TIME REQUESTED: 25 DAY

****

FIELD MEASUREMENTS	VALUE
DEPTH TO WATER (ft. below LS)	
ELEVATION OF GW SURFACE (ft. ref MSL)	
TOTAL WELL DEPTH FT. (below LS)	
pH (units) - Field	
SPEC. CONDUCTANCE (umhos) - Field	
TEMP OF WATER SAMPLE (°F) - Field	

LAB USE ONLY

LAB NAME AQUALAB

ADDRESS _____

LAB Sample No. 28625 QC REPORT No. 55-

DATE REC'D. __/__/__ TIME REC'D __:__a

TEMP O.K. _____ (Y/N) SAMPLE PRESERVED O.K. __ (Y

LAB COMMENTS _____

****

CHEMICAL ANALYSIS FORM
CONTRACT LABORATORY SERVICE

x102

LAB MEASUREMENTS CONSTITUENT DESCRIPTION AND REQUIRED UNIT OF MEASURE	STORET NUMBER	REMARKS SEE INST.	REPL APP	< OR >	BT-38625 VALUE ug/g	REPORTING LEVEL DIGITS TO L or R	L or OF DECI
ANTIMONY	01097	U		<	14	1	4
ARSENIC	01002	—	—	—	13	1	4
BERYLLIUM	01012	U	—	<	1	1	4
CADMIUM	01027	—	—	—	26.6	1	8
CHROMIUM	01034	—	—	—	18.1	1	8
COPPER	01042	—	—	—	418	1	4
LEAD	01051	—	—	—	1590	2	4
MERCURY	71900	—	—	—	0.04	2	4
NICKEL	01067	—	—	—	144	1	4
SELENIUM	01147	U	—	<	6	1	4
SILVER	01077	—	—	—	0.8	1	4
THALLIUM	01059	U	—	<	3	1	4
ZINC	01092	—	—	—	836	2	4
TS %	-----	—	—	—	70.61	2	4
	-----	—	—	—	-----	—	—
	-----	—	—	—	-----	—	—
	-----	—	—	—	-----	—	—
	-----	—	—	—	-----	—	—

Footnotes: For reporting results to IEPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: Results on a dry weight basis.

Lab Manager: Dilleen M. McHastad

IEPA
CONTRACT LABORATORY PROGRAM
CHEMICAL ANALYSIS FORM

SITE INVENTORY NUMBER 1210500002

REGION Southern CO. Marion

FACILITY NAME Sanitary Zinc Co.

SITE BILLING CODE LP52130

****

MONITOR POINT NUMBER X103 DATE COLLECTED 07/25/86

TIME COLLECTED 14:32 (24 HR CLOCK) MONITOR POINT SAMPLED BY _____ (SPECIFY METHOD)

SAMPLE FIELD FILTERED - INORGANICS (Y/N) _

COLLECTED BY Mike Grant DIVISION OR CO. DLPC

****

SAMPLE APPEARANCE: SOIL SAMPLE OFF-SITE, GRAY MATERIAL WHICH RUNS-OFF

COLLECTOR COMMENTS: TAKEN SOUTH OF FACILITY IN FIELD, OFF-SITE DRAINAGE PATHWAY.

TEST REQUESTED: PRIORITY POLLUTANT METALS

TURN AROUND TIME REQUESTED: 7 DAY

****

FIELD MEASUREMENTS	VALUE
DEPTH TO WATER (ft. below LS)	
ELEVATION OF GW SURFACE (ft. ref MSL)	
TOTAL WELL DEPTH FT. (below LS)	
pH (units) - Field	
SP. CONDUCTANCE (umhos) - Field	
TEMP OF WATER SAMPLE (°F) - Field	

LAB USE ONLY

LAB NAME Aquatics

ADDRESS _____

LAB Sample No. 28628 QC REPORT No. 55

DATE REC'D. ___/___/___ TIME REC'D ___:___

TEMP O.K. _____ (Y/N) SAMPLE PRESERVED O.K. _

LAB COMMENTS _____

CONTROL ANALYSIS FORM
CONTRACT LABORATORY SERVICE

BT-29628

x10

LAB MEASUREMENTS CONSTITUENT DESCRIPTION AND REQUIRED UNIT OF MEASURE	STORET NUMBER	REMARKS SEE INST.	REPL APP	< OR >	VALUE ug/g	REPORTING LEVEL DIGITS TO L or R	L
	J0 J4	J5	J6	J7	J8 ---30.--- J9	J10 J11	
ANTIMONY	01097	—	—	—	---10.---	2	
ARSENIC	01002	—	—	—	---1.---	1	
BERYLLIUM	01012	U	—	<	---14.2---	1	
CADMIUM	01027	—	—	—	---235---	1	
CHROMIUM	01034	—	—	—	---880.---	1	
COPPER	01042	—	—	—	--5650.---	2	
LEAD	01051	—	—	—	---2.43---	2	
MERCURY	71900	—	—	—	--230.---	2	
NICKEL	01067	—	—	—	---2.---	1	
SELENIUM	01147	U	—	<	---2.5---	1	
SILVER	01077	—	—	—	---2.---	1	
THALLIUM	01059	U	—	<	56700.---	3	
ZINC	01092	—	—	—	---25.46---	2	
TOTAL SOLIDS	-----	—	—	—	-----------	—	
	-----	—	—	—	-----------	—	
	-----	—	—	—	-----------	—	
	-----	—	—	—	-----------	—	
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Footnotes: For reporting results to [EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: Results on a dry weight Basis

Lab Manager

CHEMICAL ANALYSIS FORM
CONTRACT LABORATORY SERVICE

28628

LAB MEASUREMENTS CONSTITUENT DESCRIPTION AND REQUIRED UNIT OF MEASURE	STORET NUMBER	REMARKS SEE INST.	REPL APP	< OR >	VALUE	REPORTING LEVEL DIGITS TO L or R	L or OF DECI
	30 34	35	36	37	38 ug/g 47	48	49
ANTIMONY	01097	—	—	—	N.A	—	—
ARSENIC	01002	—	—	—	5.	1	1
BERYLLIUM	01012	—	—	—	N.A	—	—
CADMIUM	01027	—	—	—		—	—
CHROMIUM	01034	—	—	—		—	—
COPPER	01042	—	—	—		—	—
LEAD	01051	—	—	—		—	—
MERCURY	71900	—	—	—		—	—
NICKEL	01067	—	—	—		—	—
SELENIUM	01147	—	—	—		—	—
SILVER	01077	—	—	—		—	—
THALLIUM	01059	—	—	—		—	—
ZINC	01092	—	—	—	✓	—	—
TS %	-----	—	—	—	95.61	2	E
	-----	—	—	—		—	—
	-----	—	—	—		—	—
	-----	—	—	—		—	—
	-----	—	—	—		—	—

Footnotes: For reporting results to IEPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.
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Comments: Results on a dry weight basis

Lab Manager William H. McHenry

IEPA
CONTRACT LABORATORY PROGRAM
CHEMICAL ANALYSIS FORM

SITE INVENTORY NUMBER 1210500002

REGION Southern CO. Marion

FACILITY NAME Sandoval Zinc Co.

SITE BILLING CODE LP52130

****

MONITOR POINT NUMBER X201 DATE COLLECTED 07/25/86

TIME COLLECTED 13:02 (24 HR CLOCK) MONITOR POINT SAMPLED BY GRAB USING JAR (SPECIFY METHOD)

SAMPLE FIELD FILTERED - INORGANICS (Y/N) _

COLLECTED BY Mike Ernst DIVISION OR CO. DLPC

****

SAMPLE APPEARANCE: GRAY GRANULAR MATERIAL

COLLECTOR COMMENTS: TAKEN FROM PILE ON NORTH NORTH WEST SIDE OF FACILITY

TEST REQUESTED: PRIORITY POLLUTANT METALS

TURN AROUND TIME REQUESTED: 7 Days

****

FIELD MEASUREMENTS	VALUE
DEPTH TO WATER (ft. below LS)	
ATION OF GW SURFACE (ft. ref MSL)	
TOTAL WELL DEPTH FT. (below LS)	
(units) - Field	
SPEC CONDUCTANCE (umhos) - Field	
P OF WATER SAMPLE (°F) - Field	

LAB USE ONLY

LAB NAME Aquatrix Inc

ADDRESS Bartlett

LAB Sample No. 28621 QC REPORT No. 55

DATE REC'D. ___/___/___ TIME REC'D ____:____am/

TEMP O.K. _____ (Y/N) SAMPLE PRESERVED O.K. ____ (Y/N)

LAB COMMENTS

CHEMICAL ANALYSIS FORM
CONTRACT LABORATORY SERVICE

LAB MEASUREMENTS CONSTITUENT DESCRIPTION AND REQUIRED UNIT OF MEASURE	STORET NUMBER	REMARKS SEE INST.	REPL APP	< OR >	BT-2862/ VALUE ug/g	X20/ REPORTING LEVEL DIGITS TO L or R	L
ANTIMONY	01097				140	2	
ARSENIC	01002	—	—	—	*	—	
BERYLLIUM	01012	U	—	<	1	1	
CADMIUM	01027	—	—	—	35.1	1	
CHROMIUM	01034	—	—	—	1360	1	
COPPER	01042	—	—	—	34200	3	
LEAD	01051	—	—	—	25800	3	
MERCURY	71900	—	—	—	0.11	2	
NICKEL	01067	—	—	—	12100	3	
SELENIUM	01147	SU	—	<	20	2	
SILVER	01077	—	—	—	5.1	1	
THALLIUM	01059	U	—	<	2	1	
ZINC (1)	01092	—	—	—	16 (1)	1	
TOTAL SOLIDS	-----	—	—	—	37.44	2	
	-----	—	—	—	-----	—	
	-----	—	—	—	-----	—	
	-----	—	—	—	-----	—	
	-----	—	—	—	-----	—	

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Comments: (1) ZINC REPORTED IN % (PERCENT)

Results on a dry weight basis

Lab Manager [signature]

* Arsenic Data to Follow

CHEMICAL ANALYSIS FORM
CONTRACT LABORATORY SERVICE

X201

28621

LAB MEASUREMENTS CONSTITUENT DESCRIPTION AND REQUIRED UNIT OF MEASURE	STORET NUMBER	REMARKS SEE INST.	REPL APP	< OR >	VALUE ug/g	REPORTING LEVEL DIGITS TO L or R	REPORTING LEVEL L or DEC
ANTIMONY	01097				N.A		
ARSENIC	01002	SU	—	<	4	1	4
BERYLLIUM	01012	—	—	—	N.A	—	—
CADMIUM	01027	—	—	—		—	—
CHROMIUM	01034	—	—	—		—	—
COPPER	01042	—	—	—		—	—
LEAD	01051	—	—	—		—	—
MERCURY	71900	—	—	—		—	—
NICKEL	01067	—	—	—		—	—
SELENIUM	01147	—	—	—		—	—
SILVER	01077	—	—	—		—	—
THALLIUM	01059	—	—	—		—	4
ZINC	01092	—	—	—		—	—
TS %	-----	—	—	—		—	—
	-----	—	—	—		—	—
	-----	—	—	—		—	—
	-----	—	—	—		—	—
	-----	—	—	—		—	—

Footnotes: -- For reporting results to IEPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: Results on a dry weight basis

Lab Manager [illegible]

IEPA
CONTRACT LABORATORY PROGRAM
CHEMICAL ANALYSIS FORM

SITE INVENTORY NUMBER 1210500002

REGION Southern CO. Macon

FACILITY NAME Sandoval Zinc Co.

SITE BILLING CODE LP52130

****

MONITOR POINT NUMBER X202 DATE COLLECTED 071 25 86

TIME COLLECTED 13:16 (24 HR CLOCK) MONITOR POINT SAMPLED BY ~~GRAB~~ TROWEL (SPECIFY METHOD)

SAMPLE FIELD FILTERED - INORGANICS (Y/N) __

COLLECTED BY Mike Ernst DIVISION OR CO. DLPC

****

SAMPLE APPEARANCE: GRAY Sludge like.

COLLECTOR COMMENTS: TAKEN FROM PIT AREA ON SW PORTION OF FACILITY

TEST REQUESTED: PRIORITY POLLUTANT METALS

Marked for shipment Required

TURN AROUND TIME REQUESTED: 25 DAY to Lab Shipper 7/31

****

FIELD MEASUREMENTS	VALUE
DEPTH TO WATER (ft. below LS)	
ELEVATION OF GW SURFACE (ft. ref MSL)	
TOTAL WELL DEPTH FT. (below LS)	
pH (units) - Field	
SPEC. CONDUCTANCE (umhos) - Field	
TEMP OF WATER SAMPLE (°F) - Field	

LAB USE ONLY

LAB NAME AQUALAB

ADDRESS

LAB Sample No. 28622 QC REPORT No. 55-

DATE REC'D. ___/___/___ TIME REC'D ___:___

TEMP O.K. ___ (Y/N) SAMPLE PRESERVED O.K. ___ (Y/N)

LAB COMMENTS

****

CHEMICAL ANALYSIS FORM
CONTRACT LABORATORY SERVICE

X202

LAB MEASUREMENTS CONSTITUENT DESCRIPTION AND REQUIRED UNIT OF MEASURE	STORET NUMBER	REMARKS SEE INST.	REPL APP	< OR >	BT-28622 VALUE ug/g	REPORTING LEVEL DIGITS TO L or R	L or OF DECI
ANTIMONY	01097	U		<	28	1	1
ARSENIC	01002	—	—	—	17	1	1
BERYLLIUM	01012	U	—	<	3	1	1
CADMIUM	01027	—	—	—	21.9	1	1
CHROMIUM	01034	—	—	—	9.8	1	1
COPPER	01042	—	—	—	320.	1	1
LEAD	01051	—	—	—	40000	3	1
MERCURY	71900	—	—	—	0.28	2	1
NICKEL	01067	—	—	—	52	1	1
SELENIUM	01147	U	—	<	12.	1	1
SILVER	01077	—	—	—	5.2	1	1
THALLIUM	01059	U	—	<	6.	1	1
ZINC (1) %	01092	—	—	—	40.3	1	1
TS %	-----	—	—	—	34.14	2	1
	-----	—	—	—	-----	—	—
	-----	—	—	—	-----	—	—
	-----	—	—	—	-----	—	—
	-----	—	—	—	-----	—	—

Footnotes: For reporting results to IEPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.
--

Comments: Results on a dry weight basis

Lab Manager [illegible]

(1) ZINC REPORTED IN % UNITS

IEPA
CONTRACT LABORATORY PROGRAM
CHEMICAL ANALYSIS FORM

SITE INVENTORY NUMBER 1210500002

REGION Southern CO. Marion

FACILITY NAME Sandoval Zinc Co.

SITE BILLING CODE LP52130

****

MONITOR POINT NUMBER X203 DATE COLLECTED 07/25/86

TIME COLLECTED 13:52 (24 HR CLOCK) MONITOR POINT SAMPLED BY GRAB USING JAR (SPECIFY METHOD)

SAMPLE FIELD FILTERED - INORGANICS (Y/N) __

COLLECTED BY Mike Grant DIVISION OR CO. DLPC

****

SAMPLE APPEARANCE: BROWNISH GRAY GRANULAR

COLLECTOR COMMENTS: TAKEN FROM DEMOLISHED FURNACE ON EAST SIDE

TEST REQUESTED: PRIORITY POLLUTANT METALS

TURN AROUND TIME REQUESTED: 25 DAY

****

FIELD MEASUREMENTS	VALUE
DEPTH TO WATER (ft. below LS)	
ELEVATION OF GW SURFACE (ft. ref MSL)	
TOTAL WELL DEPTH FT. (below LS)	
pH (units) - Field	
SPEC. CONDUCTANCE (umhos) - Field	
TEMP OF WATER SAMPLE (°F) - Field	

LAB USE ONLY

LAB NAME AQUALAB

ADDRESS

LAB Sample No. 28624 QC REPORT No. 55-

DATE REC'D. __/__/__ TIME REC'D __:__

TEMP O.K. ____ (Y/N) SAMPLE PRESERVED O.K. __

LAB COMMENTS

CHEMICAL ANALYSIS FORM
CONTRACT LABORATORY SERVICE

BT-28624

x2

LAB MEASUREMENTS CONSTITUENT DESCRIPTION AND REQUIRED UNIT OF MEASURE	STORET NUMBER	REMARKS SEE INST.	REPL APP	< OR >	VALUE ug/g	REPORTING LEVEL DIGITS TO L or R	L
ANTIMONY	01097				41.	1	
ARSENIC	01002	—	—	—	26.	1	
BERYLLIUM	01012	U	—	<	1.	1	
CADMIUM	01027	—	—	—	19.6	1	
CHROMIUM	01034	—	—	—	9.2	1	
COPPER	01042	—	—	—	1780.	2	
LEAD	01051	—	—	—	10800.	3	
MERCURY	71900	—	—	—	0.25	2	
NICKEL	01067	—	—	—	220.	2	
SELENIUM	01147	U	—	<	4.	1	
SILVER	01077	—	—	—	4.4	1	
THALLIUM	01059	U	—	<	2.	1	
ZINC	01092	—	—	—	26400.	3	
TS %	-----	—	—	—	91.63	2	
	-----	—	—	—	-----	—	
	-----	—	—	—	-----	—	
	-----	—	—	—	-----	—	
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Footnotes: For reporting results to IEPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: Results on a dry weight basis.

Lab Manager: William H. Hatfield

IEPA
CONTRACT LABORATORY PROGRAM
CHEMICAL ANALYSIS FORM

SITE INVENTORY NUMBER 1210500002

REGION Southern CO. Marion

FACILITY NAME Sandoval Zinc Co.

SITE BILLING CODE LP 52 130

****

MONITOR POINT NUMBER X204 DATE COLLECTED 07/25/86

TIME COLLECTED 14:05 (24 HR CLOCK) MONITOR POINT SAMPLED BY GRAB USING JAR (SPECIFY METHOD)

SAMPLE FIELD FILTERED - INORGANICS (Y/N) __

COLLECTED BY Mike Grant DIVISION OR CO. DLPC

****

SAMPLE APPEARANCE: LIGHT GRAY, DUST + GRANULAR

COLLECTOR COMMENTS: TAKEN FROM CENTER OF OLD LAGOON

TEST REQUESTED: PRIORITY POLLUTANT METALS

TURN AROUND TIME REQUESTED: 25 DAY

****

FIELD MEASUREMENTS	VALUE
DEPTH TO WATER (ft. below LS)	
ELEVATION OF GW SURFACE (ft. ref MSL)	
TOTAL WELL DEPTH FT. (below LS)	
pH (units) - Field	
SPEC CONDUCTANCE (umhos) - Field	
TEMP OF WATER SAMPLE (°F) - Field	

LAB USE ONLY

LAB NAME AQUALAB

ADDRESS

LAB Sample No. 25626 QC REPORT No. 55-

DATE REC'D. ___/___/___ TIME REC'D ___:___

TEMP O.K. ___ (Y/N) SAMPLE PRESERVED O.K. ___

LAB COMMENTS

CHEMICAL ANALYSIS FORM
CONTRACT LABORATORY SERVICE

X204

LAB MEASUREMENTS CONSTITUENT DESCRIPTION AND REQUIRED UNIT OF MEASURE	STORET NUMBER	REMARKS SEE INST.	REPL APP	< OR >	BT-28626 VALUE ug/g	REPORTING LEVEL DIGITS TO L or R	L or DECI
	30 34	35	36	37	38 37	48	49
ANTIMONY	01097	U		<	14	1	2
ARSENIC	01002	—	—	—	11.	1	2
BERYLLIUM	01012	U	—	<	1.	1	2
CADMIUM	01027	—	—	—	60.9	1	2
CHROMIUM	01034	—	—	—	22.9	1	2
COPPER	01042	—	—	—	1560.	2	2
LEAD	01051	—	—	—	69600.	3	2
MERCURY	71900	—	—	—	4.55	2	2
NICKEL	01067	—	—	—	610.	2	2
SELENIUM	01147	U	—	<	6.	1	2
SILVER	01077	—	—	—	1.9	1	2
THALLIUM	01059	U	—	<	3.	1	2
ZINC (1) %	01092	—	—	—	32.8	1	2
TS %	-----	—	—	—	12.53	2	2
	-----	—	—	—	-----	—	—
	-----	—	—	—	-----	—	—
	-----	—	—	—	-----	—	—
	-----	—	—	—	-----	—	—

Footnotes: For reporting results to IEPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: Results on a dry weight basis.

Lab Manager [illegible]

(1) ZINC REPORTED AS %

IEPA
CONTRACT LABORATORY PROGRAM
CHEMICAL ANALYSIS FORM

SITE INVENTORY NUMBER 1210500002

REGION Southern CO. Marion

FACILITY NAME Sanitary Zinc Co.

SITE BILLING CODE LP52130

****

MONITOR POINT NUMBER X205 DATE COLLECTED 07/25/86

TIME COLLECTED 14:20 MONITOR POINT SAMPLED BY _____
(24 HR CLOCK) (SPECIFY METHOD)

SAMPLE FIELD FILTERED - INORGANICS (Y/N) _

COLLECTED BY Mike Ernst DIVISION OR CO. DLPC

****

SAMPLE APPEARANCE: DARK GRAY & SLUDGE LIKE

COLLECTOR COMMENTS: TAKEN FROM OLD LAGOON S OF SAMPLE X204

TEST REQUESTED: PRIORITY POLLUTANT METALS

TURN AROUND TIME REQUESTED: 25 DAY

****

FIELD MEASUREMENTS	VALUE
DEPTH TO WATER (ft. below LS)	
ELEVATION OF GW SURFACE (ft. ref MSL)	
TOTAL WELL DEPTH FT. (below LS)	
pH (units) - Field	
SPEC. CONDUCTANCE (umhos) - Field	
TEMP OF WATER SAMPLE (°F) - Field	

LAB USE ONLY

LAB NAME AQUALAB

ADDRESS _____

LAB Sample No. 28627 QC REPORT No. 55-

DATE REC'D. ___/___/___ TIME REC'D ___:___

TEMP O.K. _____ (Y/N) SAMPLE PRESERVED O.K. _ (Y/N)

LAB COMMENTS _____

****

CHEMICAL ANALYSIS FORM
CONTRACT LABORATORY SERVICE

LAB MEASUREMENTS CONSTITUENT DESCRIPTION AND REQUIRED UNIT OF MEASURE	STORET NUMBER	REMARKS SEE INST.	REPL APP	< OR >	BT-28627 VALUE ug/g	REPORTING LEVEL DIGITS TO L or R	L DI
ANTIMONY	01097	—	—	—	32	1	
ARSENIC	01002	—	—	—	11	1	
BERYLLIUM	01012	U	—	<	1	1	
CADMIUM	01027	—	—	—	110	1	
CHROMIUM	01034	—	—	—	22.2	1	
COPPER	01042	—	—	—	2810	2	
LEAD	01051	—	—	—	22400	3	
MERCURY	71900	—	—	—	5.79	2	
NICKEL	01067	—	—	—	800	2	
SELENIUM	01147	U	—	<	6	1	
SILVER	01077	—	—	—	3.2	1	
THALLIUM	01059	U	—	<	3	1	
ZINC (1) %	01092	—	—	—	19.5	1	
TS %	-----	—	—	—	13.95	2	
	-----	—	—	—		—	
	-----	—	—	—		—	
	-----	—	—	—		—	
	-----	—	—	—		—	

x20

Footnotes: For reporting results to IEPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: Results on a dry weight basis.

Lab Manager: William H. Mottesheard

(1) ZINC REPORTED AS %